

CLAIMS

What is claimed is:

1. A method for making a stator, the method comprising:
 - 5 installing a first set of concentric coil groups through a first end of a stator core, whereby leads of the first set of concentric coils exit the first end of the stator core;
 - installing a second set of concentric coil groups through a second end of the stator core, whereby leads of the second set of concentric coils exit the second end of the stator core;
 - 10 installing a third set of concentric coil groups through the first end of the stator core, whereby leads of the third set of concentric coils exit the first end of the stator core; and
 - installing a fourth set of concentric coil groups through the second end of the stator core, whereby leads of the fourth set of concentric coils exit the second end of the stator core.
- 15 2. The method of claim 1, wherein at least one coil of the third set of concentric coil groups is installed over a coil of the first set of concentric coils in a slot of the stator core.
- 20 3. The method of claim 2, wherein at least one coil of the fourth set of concentric coil groups is installed over a coil of the second set of concentric coils in a slot of the stator core.
- 25 4. The method of claim 1, wherein at least one coil of each coil group is installed in a respective stator slot with a coil of a different coil group.
5. The method of claim 4, wherein at least one coil of each coil group is installed singularly in a respective stator slot.

6. The method of claim 1, wherein the coil groups define a four-pole, three-phase stator.

5 7. The method of claim 1, wherein the coil groups are disposed in an order of A1, B4, C2, A3, B1, C4, A2, B3, C1, A4, B2, and C3, where A, B and C represent alternating current phases, and 1, 2, 3 and 4 represent coil groups of the first, second, third and fourth sets, respectively.

10 8. The method of claim 7, wherein the stator core includes 72 slots and each coil group includes 4 coils.

15 9. The method of claim 1, wherein the coil groups are installed as set forth in Table 2.

10 10. The method of claim 1, wherein the stator core is rotated between each installation step.

20 11. A method for making a stator, the method comprising:
installing first and third sets of concentric coil groups in a stator core, whereby leads of the first and third sets of concentric coils exit the first end of the stator core; and
installing a second and fourth sets of concentric coil groups in the stator core, whereby leads of the second and fourth sets of concentric coils exit the second end of the stator core.

25 12. The method of claim 11, wherein the first and third sets of concentric coil groups are installed through the first end, and the second and fourth sets of concentric coil groups are installed through the second end.

13. The method of claim 12, wherein the stator core is rotated between the installation of the first and third coil group sets and installation of the second and fourth coil group sets.

5 14. The method of claim 12, wherein the stator core is rotated between installation of the first and second coil group sets, between installation of the second and third coil group sets, and between installation of the third and fourth coil group sets.

10 15. The method of claim 12, wherein at least one coil of the second and fourth coil group sets is installed over a coil of the first and third coil group sets in respective slots of the stator core.

15 16. The method of claim 15, wherein at least one coil of each coil group set is installed singularly within a respective slot of the stator core.

17. The method of claim 12, wherein the coil groups define a four-pole, three-phase stator.

20 18. The method of claim 12, wherein the coil groups are disposed in an order of A1, B4, C2, A3, B1, C4, A2, B3, C1, A4, B2, and C3, where A, B and C represent alternating current phases, and 1, 2, 3 and 4 represent coil groups of the first, second, third and fourth sets, respectively.

25 19. The method of claim 12, wherein the stator core includes 72 slots and each coil group includes 4 coils.

20. The method of claim 12, wherein the coil groups are installed as set forth in Table 2.

21. A method for making a four-pole, three-phase stator, the method comprising:

installing a first set of concentric coil groups through a first end of a stator core, whereby leads of the first set of concentric coils exit the first end of the stator core;

5 rotating the stator core;

installing a second set of concentric coil groups through a second end of the stator core, whereby leads of the second set of concentric coils exit the second end of the stator core;

rotating the stator core;

10 installing a third set of concentric coil groups through the first end of the stator core, whereby leads of the third set of concentric coils exit the first end of the stator core;

rotating the stator core; and

installing a fourth set of concentric coil groups through the second end of the stator core, whereby leads of the fourth set of concentric coils exit the second end of the stator core.

22. The method of claim 21, wherein the stator core is rotated about a central vertical axis.

23. The method of claim 21, wherein at least one coil of each group of the second coil group set is installed over a coil of a group of the first coil group set in a respective slot of the stator core.

24. The method of claim 23, wherein at least one coil of each group of the fourth coil group set is installed over a coil of a group of the third coil group set in a respective slot of the stator core.

25. The method of claim 21, wherein at least one coil of each group is installed singularly within a respective slot of the stator core.

26. The method of claim 21, wherein the coil groups are disposed in an order of A1, B4, C2, A3, B1, C4, A2, B3, C1, A4, B2, and C3, where A, B and C represent alternating current phases, and 1, 2, 3 and 4 represent coil groups of the first, second, third and fourth sets, respectively.

5

27. The method of claim 21, wherein the stator core includes 72 slots and each coil group includes 4 coils.

10

28. The method of claim 21, wherein the coil groups are installed as set forth in Table 2.

15

29. A method for making a stator, the method comprising:
installing a plurality of concentric coil groups in slots of a stator core in an order of A1, B4, C2, A3, B1, C4, A2, B3, C1, A4, B2, and C3, where A, B and C represent alternating current phases, and 1, 2, 3 and 4 represent coil groups of the first, second, third and fourth sets, respectively, and wherein groups A1, B4, C2, A2, B3 and C1 are installed through a first end of the stator core whereby coil leads of each group exit the stator core through the first end, and groups A3, B1, C4, A4, B2 and C3 are installed through a second end of the stator core whereby coil leads of each group exit the stator core through the second end.

20

30. A method for making a stator, the method comprising installing a plurality of concentric coil groups in slots of a stator core as set forth in Table 2.